

Application Number 09/867,053
Amendment dated June 28, 2004
Responsive to Office Action mailed March 29, 2004

REMARKS

This amendment is responsive to the Office Action dated March 29, 2004. Applicant has amended claims 1, 3, 4, 14, 15, 17, 21, 31 and 33 and canceled claim 2 and 9. Claims 1, 3-8, and 10-40 are now pending.

In the Office Action, the Examiner rejected claims 1, 2, 3, 4, 9, 15, 16, 17, 19-20, 21, 23-25, 26, 27, 29, 31, 33, 34, 36, 38, 39 under 35 U.S.C. 102(e) as being anticipated by Deguchi et al. (US 6,480,202) (hereafter Deguchi). In addition, the Examiner rejected claims 5-6, 7-8, 10-14, 18, 22, and 32 under 35 U.S.C. 103(a) as being unpatentable over Deguchi in view of Hansen (US 6,147,664) (hereafter Hansen); and rejected claims 28, 30, 35, 37, and 40 under 35 U.S.C. 103(a) as being unpatentable over Deguchi in view of Hansen and further in view of Liang (US 5,579,031) (hereafter Liang).

Applicant respectfully traverses the rejections to the extent such rejections may be considered applicable to the claims as amended. There are at least two reasons why the current rejections should be withdrawn. First, all of Applicant's independent claims require that the illuminant condition sensor be integrated with the display housing so as to form part of the display device. This feature is clearly lacking from the applied prior art. In contrast, the applied prior art describes sensors that do not form part of the display housing, but rather comprise stand-alone sensors mounted on the display. In Deguchi, for example, the sensor is described as being mounted on top of the monitor. See column 7, lines 55-56, of Deguchi, which was cited by the Examiner in rejecting Applicant's claims. A sensor mounted on a display is clearly different than a sensor integrated to form part of the display.

Similarly, Hansen describes an ambient light sensor that "can be placed within a number of positions." See column 14, lines 27-30. In one example, Hansen indicates that the ambient light sensor is "coupled to the FED flat panel display screen." See column 14, lines 56-67. Liang also lacks any suggestion of an illuminant condition sensor integrated with the display housing so as to form part of the display device, as claimed.

Second, the current rejections are improper also because in Deguchi the measurement of ambient light (via a stand-alone sensor mounted on the display) is used to adjust a tone reproduction curve (TRC) within a monitor profile, as illustrated in FIG. 2 of Deguchi. All of Applicant's claims also distinguish this aspect of Deguchi. For example, claim 1 recites circuitry

Application Number 09/867,053
Amendment dated June 28, 2004
Responsive to Office Action mailed March 29, 2004

that automatically calibrates the display according to the illuminant conditions sensed by the illuminant condition sensor. Deguchi lacks any suggestion of such circuitry. Claim 15 recites automatically adjusting display characteristics of the display device according to the sensed illuminant conditions, which as outlined below, is very different than the adjustment of a TRC within a monitor profile as described by Deguchi. Claims 21 and 31 recite adjusting color data received from a source device for use by the display device based on a source device profile, a destination device profile associated with the display device, and the sensed illuminant conditions. Again, this feature is very different from the TRC adjustments within a monitor profile, described in Deguchi.

Applicant discusses each of the independent claims and the applied prior art in greater detail below.

Claim 1

Claim 1 has been amended to recite a display device including a display that produces a visible representation of an image, the display including a display housing, and an illuminant condition sensor that senses illuminant conditions surrounding the display device, the illuminant condition sensor being integrated with the display housing so as to form part of the display device. Claim 1 also recites circuitry that automatically calibrates the display according to the illuminant conditions sensed by the illuminant condition sensor. Claim 1 stands rejected under 35 U.S.C. 102(e) as being anticipated by Deguchi.

However, as mentioned above, the sensors described in Deguchi do not form part of the display housing, but rather comprise stand-alone sensors. In Deguchi, the sensor is described as being mounted on top of the monitor. See column 7, lines 55-56. This is clearly different than an illuminant condition sensor integrated to form part of the display, as claimed.

Also, claim 1 recites computer circuitry that automatically calibrates the display according to the illuminant conditions sensed by the illuminant condition sensor. Deguchi lacks any suggestion of such circuitry. In Deguchi, the measurement of ambient light is used to adjust a tone reproduction curve (TRC) within a monitor profile, not to provide input to circuitry that automatically calibrates the display. Adjustments to a display profile as taught in Deguchi, for example, would have no effect on the calibration state of the display device. In particular,

Application Number 09/867,053
Amendment dated June 28, 2004
Responsive to Office Action mailed March 29, 2004

insofar as the TRC described in Deguchi is stored as part of the monitor profile, the TRC is unrelated to display calibration. Thus, if illuminant conditions change, Applicants invention would recalibrate the display. However, if illuminant conditions change, Deguchi would not recalibrate the display but would simply change the profile of the display.

For each of these two reasons, the rejection of claim 1 should be withdrawn. At this time Applicant reserves further comment on the other features recited in the dependent claims of claim 1.

Claim 15

Claim 15 has been amended to recite a method comprising sensing illuminant conditions with an illuminant condition sensor that forms part of a display device, the illuminant condition sensor being integrated with the display device so as to form part of the display device, and automatically adjusting display characteristics of the display device according to the sensed illuminant conditions. Claim 15 stands rejected under 35 U.S.C. 102(e) as being anticipated by Deguchi.

Again, unlike the features recited in claim 15, the sensors described in the applied prior art do not form part of the display device, but rather comprise stand-alone sensors, which are mounted on the displays. As outlined above, this is clearly different than an illuminant condition sensor integrated to form part of the display device, as claimed.

Also, claim 15 recites automatically adjusting display characteristics of the display device according to the sensed illuminant conditions. Deguchi lacks any suggestion of the automatic adjustment of the display characteristics of the display device. In Deguchi, the measurement of ambient light is used to adjust a tone reproduction curve (TRC) within a monitor profile, not to adjust the characteristics of the display itself. Profiles are typically used to perform transformations on image data, but would not typically alter or change the output characteristics of the display itself.

For each of these two reasons, the rejection of claim 15 should be withdrawn. At this time, Applicant reserves further comment on the other features recited in the dependent claims of claim 15.

Application Number 09/867,053
Amendment dated June 28, 2004
Responsive to Office Action mailed March 29, 2004

Claims 21 and 31

Claim 21 has been amended to recite a method comprising sensing illuminant conditions with an illuminant condition sensor that forms part of a display device, the illuminant condition sensor being integrated with the display device so as to form part of the display device, and adjusting color data received from a source device for use by the display device based on a source device profile, a destination device profile associated with the display device, and the sensed illuminant conditions.

Similarly, claim 31 has been amended to recite a system comprising a display device including an illuminant condition sensor that senses illuminant conditions surrounding the display device, the illuminant condition sensor being integrated with the display device so as to form part of the display device, and a color matching module coupled to the sensor that adjusts color data received from a source device for use by the display device based on a source device profile, a destination device profile associated with the display device, and the sensed illuminant conditions.

Claims 21 and 31 also currently stand rejected under 35 U.S.C. 102(e) as being anticipated by Deguchi.

Again, as outlined above, unlike the features recited in claims 21 and 31, the sensors described in the applied prior art do not form part of the display, but rather comprise stand-alone sensors, which are mounted on the displays. This is clearly different than an illuminant condition sensor integrated to form part of the display device, as claimed.

Also, claims 21 and 31 recite the adjustment of color data received from a source device for use by the display device based on a source device profile, a destination device profile associated with the display device, and the sensed illuminant conditions. Deguchi lacks any suggestion of the automatic adjustment of color data based on source and destination profiles and the sensed illuminant conditions. Again, in Deguchi the measurement of ambient light is used to adjust a tone reproduction curve (TRC) within a monitor profile, not to adjust color data. While monitor profiles may be used in the transformations on image data, Deguchi lacks any suggestion of the use of source and destination profiles *and* the measured illuminant conditions to adjust color data. In this sense, the features of Applicants claims use illuminant conditions directly to adjust color data, which is different than Deguchi.

Application Number 09/867,053
Amendment dated June 28, 2004
Responsive to Office Action mailed March 29, 2004

Moreover, insofar as Applicant's claims 21 and 31 recite the adjustments to the color data are based on a device profile *and* the sensed conditions, these claims require that the sensed illuminant conditions are separate input from the device profile input. In this manner, Applicant's claimed invention provides more flexibility to the system, in that if the illuminant conditions change, image data can be modified to reflect this change in illuminant conditions without requiring the generation of a new TRC curve and a new device profile. Rather, in accordance with Applicant's claimed invention as recited in claims 21 and 31, a more static device profile can be used in conjunction with the input for the current illuminant conditions. In this manner, adjustments to color data can change to compensate for changing illuminant conditions without any need to re-generate the device profile. In contrast, if illuminant conditions change in the Deguchi system, a new TRC curve and a new device profile are created. Deguchi lacks any suggestion of the adjustment of color data received from a source device for use by the display device based on a source device profile, a destination device profile associated with the display device, and the sensed illuminant conditions.

For each of these reasons, Applicant believes that the rejection of claim 21 and 31 should be withdrawn. Moreover, Applicant submits that neither Hansen nor Liang provide any teaching that would have led a person of ordinary skill in the art to modify the teaching of Deguchi to either integrate the sensor such that it forms part of the display, or to adjust color data received from a source device for use by the display device based on a source device profile, a destination device profile associated with the display device, and the sensed illuminant conditions. Applicant respectfully request allowance of claims 21 and 31 and their respective dependent claims. At this time, Applicant reserves further comment on the other features recited in the dependent claims of claims 21 and 31.

Conclusion

For at least the reasons outlined above, all claims in this application are now in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Applicant does not acquiesce in any of the Examiner's rejections or characterizations of the prior art. Although Applicant has focused the comments above on some of the clear differences between the independent claims and the applied prior art, Applicant in no

Application Number 09/867,053
Amendment dated June 28, 2004
Responsive to Office Action mailed March 29, 2004

way represents or admits that these are the only differences between the pending claims and the prior art. Accordingly, Applicant reserves the right to provide further comment on other features of the independent or dependent claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

June 28, 2007

SHUMAKER & SIEFFERT, P.A.
8425 Seasons Parkway, Suite 105
St. Paul, Minnesota 55125
Telephone: 651.735.1100
Facsimile: 651.735.1102

By:

Kelly P. Fitzgerald
Name: Kelly Patrick Fitzgerald
Reg. No.: 46,326